**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A variable waveguide attenuator, comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing ~~at least one among~~ an electrical characteristic and a physical characteristic of the variable waveguide attenuator by manipulating said fluidic dielectric to selectively vary at least one parameter selected from the group consisting of a volume[[,]] and a shape, and to selectively vary at least one parameter selected from the group consisting of said loss tangent, said permittivity and said permeability of the fluidic dielectric; and

a controller for controlling said composition processor in response to a waveguide attenuator control signal.

2. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least two parameters selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein said composition processor selectively varies concurrently ~~at least~~ said two ~~among said volume, said loss tangent, said permittivity and said permeability~~ parameters within the at least one subcavity in response to said waveguide attenuator control signal.

3. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein the waveguide attenuator has an attenuation and said composition processor selectively varies said loss tangent to vary said attenuation.

4. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of

<u>an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;</u>

<u>a controller for controlling said composition processor in response to a waveguide attenuator control signal;</u>

wherein the waveguide attenuator has an attenuation and said composition processor selectively varies said loss tangent to maintain said attenuation constant as at least one of said permittivity and said permeability is varied.

5. (Currently amended) ~~The~~ <u>A</u> variable waveguide attenuator ~~according to claim 1~~ <u>comprising:</u>

<u>at least one waveguide attenuator cavity;</u>

<u>a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;</u>

<u>at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;</u>

<u>a controller for controlling said composition processor in response to a waveguide attenuator control signal;</u>

wherein the waveguide attenuator has a characteristic impedance and said composition processor selectively varies said permeability to maintain said characteristic impedance approximately constant when at least one <u>parameter selected from the group consisting</u> of said loss tangent, said permittivity, and said volume is varied.

6. (Currently amended) ~~The~~ <u>A</u> variable waveguide attenuator ~~according to claim 1~~ <u>comprising:</u>

<u>at least one waveguide attenuator cavity;</u>

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein the waveguide attenuator has a characteristic impedance and said composition processor selectively varies said permeability to adjust said characteristic impedance.

7. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein the waveguide attenuator has a characteristic impedance and said composition processor selectively varies said permittivity to maintain said characteristic impedance approximately constant when at least one parameter selected from the group consisting of said loss tangent, said permeability and said volume is varied.

8. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein the waveguide attenuator has a characteristic impedance and said composition processor selectively varies said permittivity to adjust said characteristic impedance.

9. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein a plurality of component parts are dynamically mixed together in said composition processor responsive to said waveguide attenuator control signal to form said fluidic dielectric.

10. (Original) The variable waveguide attenuator according to claim 9 wherein said composition processor further comprises a component part separator adapted for separating said component parts of said fluidic dielectric for subsequent reuse.

11. (Currently amended) ~~The~~ A variable waveguide attenuator ~~according to claim 1~~ comprising:

at least one waveguide attenuator cavity;

a fluidic dielectric at least partially disposed within at least one subcavity within said waveguide attenuator cavity, said fluidic dielectric having a loss tangent, a permittivity and a permeability;

at least one composition processor adapted for changing at least one characteristic of the variable waveguide attenuator selected from the group consisting of an electrical characteristic and a physical characteristic by manipulating said fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, said loss tangent, said permittivity and said permeability of the fluidic dielectric;

a controller for controlling said composition processor in response to a waveguide attenuator control signal;

wherein said composition processor further comprises at least one proportional valve, at least one mixing pump, and at least one conduit for selectively mixing and communicating a plurality of said components of said fluidic dielectric from respective fluid reservoirs to ~~a~~ said waveguide attenuator cavity.

12. (Original) The variable waveguide attenuator according to claim 1 wherein said fluidic dielectric is comprised of an industrial solvent.

13. (Currently amended) The variable waveguide attenuator according to claim ~~14~~ 12 wherein said industrial solvent has a suspension of magnetic particles contained therein.

14. (Currently amended) The variable waveguide attenuator according to claim ~~15~~ 13 wherein said magnetic particles are formed of a material selected from the group consisting of ferrite, metallic salts, and organo-metallic particles.

15. (Currently amended) The variable waveguide attenuator according to claim ~~15~~ 13 wherein said component contains between about 50% to 90% magnetic particles by weight.

16. (Currently amended) The variable waveguide attenuator according to claim 1, further comprising a second waveguide ~~filter~~ attenuator cavity.

17. (Currently amended) The variable waveguide attenuator according to claim 16, wherein said second waveguide ~~filter~~ attenuator cavity is at least partially filled with a second fluidic dielectric.

18. (Currently amended) The variable waveguide attenuator according to claim 17, further comprising at least a second composition processor adapted for dynamically changing a composition of said second fluidic dielectric to vary at least one parameter selected from the group consisting of a volume, a loss tangent, a permittivity and a permeability of said second fluidic dielectric.

19. (Currently amended) A method for attenuating an RF signal comprising the steps of:

providing at least one waveguide ~~filter~~ attenuator cavity within a waveguide;

at least partially filling said waveguide ~~filter~~ attenuator cavity with a fluidic dielectric;

propagating said RF signal within said waveguide; and

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responsive to a waveguide attenuator control signal, dynamically changing ~~at least one among~~ an electrical characteristic and a physical characteristic of the waveguide ~~a volume and a composition of~~ by manipulating said fluidic dielectric to selectively vary at least one parameter selected from the group consisting of a volume and a shape, and to selectively vary at least one parameter selected from the group consisting of a loss tangent, a permittivity and a ~~permittivity~~ permeability of said fluidic dielectric ~~in response to a waveguide attenuator control signal~~.

20. (Currently amended) ~~The~~ A method ~~according to claim 19 further~~ for attenuating an RF signal comprising the steps of:

providing at least one waveguide filter cavity within a waveguide;

at least partially filling said waveguide filter cavity with a fluidic dielectric;

propagating said RF signal within said waveguide; and

responsive to a waveguide attenuator control signal, dynamically changing at least one characteristic selected from the group consisting of a volume and a composition of said fluidic dielectric to concurrently selectively vary~~ing~~ at least two ~~among~~ parameters of the fluidic dielectric selected from the group consisting of a ~~said~~ loss tangent, ~~said~~ a permittivity and ~~said~~ a permeability ~~concurrently in response to said waveguide attenuator control signal~~.

21. (Original) The method according to claim 19 further comprising the step of varying said loss tangent to vary said attenuation.

22. (Currently amended) ~~The~~ A method ~~according to claim 19 further~~ for attenuating an RF signal comprising the steps of:

providing at least one waveguide filter cavity within a waveguide;

at least partially filling said waveguide filter cavity with a fluidic dielectric;

propagating said RF signal within said waveguide;

responsive to a waveguide attenuator control signal, varying said loss tangent to maintain said attenuation constant as at least one parameter selected from the group consisting of said permittivity and said permeability is varied.

23. (Currently amended) The method according to claim 19 further comprising the step of selectively varying said permeability to maintain a characteristic impedance of said waveguide ~~attenuator~~ approximately constant when at least one parameter selected from the group consisting of said loss tangent and said permittivity is varied.

24. (Currently amended) The method according to claim 19 further comprising the step of selectively varying said permeability to adjust ~~said~~ a characteristic impedance of said waveguide.

25. (Currently amended) The method according to claim 19 further comprising the step of selectively varying said permittivity to maintain ~~said~~ a characteristic impedance of said waveguide approximately constant when at least one parameter selected from the group consisting of said loss tangent and said permeability is varied.

26. (Currently amended) The method according to claim 19 further comprising the step of selectively varying said permittivity to adjust ~~said~~ a characteristic impedance of said waveguide.

27. (Original) The method according to claim 19 further comprising the step of dynamically mixing a plurality of components in response to said waveguide attenuator control signal to produce said fluidic dielectric.

28. (Currently amended) The method according to claim 27 further comprising the step of separating said ~~components~~ fluidic dielectric into said components ~~parts~~ for subsequent reuse in forming said fluidic dielectric.

29. (Original) The method according to claim 27 further comprising the steps of selectively mixing said components of said fluidic dielectric from respective fluid reservoirs.

30. (Currently amended) The method according to claim 19, further comprising the step of providing a second waveguide ~~filter~~ attenuator cavity.

31. (Currently amended) The method according to claim 30, further comprising the step of at least partially filling said second waveguide ~~filter~~ attenuator cavity with a second fluidic dielectric.

32. (Currently amended) The method according to claim 31, further comprising the step of providing at least a second composition processor adapted for dynamically changing a composition of said second fluidic dielectric to vary at least one parameter selected from the group consisting of a loss tangent, a permittivity and a permeability of said second fluidic dielectric.